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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/608,159	06/30/2000	Jeffrey R. Wilcox	42390.P8701	1109

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CAO, CHUN

ART UNIT	PAPER NUMBER
2185	5

DATE MAILED: 04/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/608,159	Applicant(s) Wilcox et al.
Examiner Chun Cao	Art Unit 2185



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on Jun 30, 2000

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-29 is/are pending in the application.

4a) Of the above, claim(s) 5-11, 16-21, and 24-29 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-4, 12-15, 22, and 23 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2185

DETAILED ACTION

1. Claims 1-29 are presented for examination.

Election/Restriction

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-4, 12-15 and 22-23, drawn to: an integrated circuit using cross-over logic to interface frequency domains, classified in class 713, subclass 400.
- II. Claims 5-11, drawn to: an integrated circuit comprising three portions with respective frequency wherein third frequency in cooperation with at least one of said first and second frequencies, classified in class 713, subclass 500.
- III. Claims 16-21 and 24-29 drawn to: an apparatus having a masking circuitry means to delay toggling, classified in class 713, subclass 600.

3. Inventions I and II and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed 5-11, 16-21 and 24-29. The subcombination has separate utility such as that a mask circuitry and an operation frequency in cooperation with at least one of said other frequencies.

4. The inventions are distinct, each from the other because of the following reasons:

Art Unit: 2185

a. These inventions have acquired a separate status in the art as shown by their different classification;

b. The search required for one Group is not required for the other Groups for the reasons above restriction for examination purpose as indicated is proper.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

6. During a telephone conversation on March 28, 2003, Mr. Jeffrey Draeger elected without traverse to prosecute the invention of Group I, claims 1-4, 12-15 and 22-23. Affirmation of this election must be made by applicant in replying to this office action. Claims 5-11, 16-21 and 24-29 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Objections

7. Claims 1, 12 and 22 are objected to because of the following informalities:

inconsistent terminology: “cross-over logic” and “crossover logic”.

Appropriate correction is required.

Claim Rejections - 35 U.S.C. § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

Art Unit: 2185

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-4, 12-15 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swoboda et al. (Swoboda), US Patent no. 5,329,471 in view of Fernando (Fernando), US Patent no. 5,471,587.

As claim 1, Swoboda discloses that an integrated circuit comprises at least three cooperating frequency domains having variable operating frequencies [fig. 52, 53; col. 13, lines 42-51].

Swoboda fails to disclose cross-over logic to allow integral fractional ration frequency domain, therefore, Swoboda does not establish a cross-over logic to interface with different frequency domains. A routineer in the art would have motivated to look for other teachings which cross-over logic to interface with different frequency domains.

Fernando discloses that an integrated circuit having cross-over logic [6,8, fig. 1] to allow integral fractional ration frequency domain cross-overs between more than one pair of frequency domains [col. 1, 52-55; col. 3, lines 9-32].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Swoboda and Fernando because they both disclose an integrated circuit having plurality of frequency domains and Fernando discloses the limitations above would improve the integrity of Swoboda's system by allowing to implement multiple flexible clock domain interface and frequency domain cross-overs.

Art Unit: 2185

As the limitations set forth claims 2 and 4 are directed to implementations implementing the integrated circuit of claim 1. As discussed above, Swoboda and Fernando teach the integrated circuit of claim 1. It is for this reason, at the time of the invention, one of ordinary skill in the art would have readily recognized that Swoboda and Fernando may obviously also teach the implementations of the integrated circuit of claim 1 as set forth in claims 2 and 4. Therefore, claims 2 and 4 are rejected under the same rationale with respect to claim 1.

As claim 3, Swoboda discloses at least three cooperating frequency domains comprise: a processor domain operable at a relatively large number of different frequencies; a memory control domain; a memory interface domain operable at a first relatively small number of frequencies; a bus interface domain operable at a second relatively small number of frequencies [fig. 52, col. 13, lines 42-65]; and Fernando teaches of relations of number of frequencies [col. 1, lines 52-56].

10. As claims 12 and 13 are written in means plus function format and contain the same limitation as claims 1 and 3-4 in combination or respectively, therefore the same rejections applied.

11. As claim 22, Swoboda discloses that an integrated circuit comprising: a first portion operable at a first plurality of frequencies said first portion to operate in a first frequency domain; a second portion operable at a second plurality of frequencies that are different to said first portion said second portion to operate in a second frequency domain [fig. 52, 53; col. 13, lines 42-51].

Art Unit: 2185

Fernando discloses that an integrated circuit having cross-over logic [6,8, fig. 1] to allow integral fractional ration frequency domain cross-overs between more than one pair of frequency domains [col. 1, 52-55; col. 3, lines 9-32]; and the cross-over logic comprising: a plurality of latches arranged as a FIFO array; a plurality of status bits comprise a plurality of free bits, a plurality of valid bits; a writer element to maintain a write pointer to said FIFO array in said first frequency domain; a reader element to maintain a read pointer to said FIFO array in said second frequency domain; domain crossing handshake circuitry to update said plurality of free bits and said plurality of valid bits [col. 5, lines 27-37; col. 6, line 28-col. 7, line 52; col. 10, lines 35-67].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Swoboda and Fernando because they both disclose an integrated circuit having plurality of frequency domains and Fernando discloses the limitations above would improve the integrity of Swoboda's system by allowing to implement multiple flexible clock domain interface and frequency domain cross-overs.

As the limitations set forth claim 23 is directed to implementations implementing the integrated circuit of claim 22. As discussed above, Swoboda and Fernando teach the integrated circuit of claim 22. It is for this reason, at the time of the invention, one of ordinary skill in the art would have readily recognized that Swoboda and Fernando may obviously also teach the implementations of the integrated circuit of claim 22 as set forth in claim 23. Therefore, claim 23 is rejected under the same rationale with respect to claim 22.

Art Unit: 2185

12. As claims 14-15 are written in means plus function format and contain the same limitation as claims 22 and 23 respectively, therefore the same rejections applied.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 746-7239, (for formal communications intended for entry)

Or:

(703) 746-7240 (for informal or draft communications, please label

"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA., Sixth Floor (Receptionist).

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chun Cao at (703)308-6106. The examiner can normally be reached on Monday-Friday from 7:30 am - 4:00 pm. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor Thomas Lee can be reached at (703)305-9717. The fax

Application/Control Number: 09/608159

Page 8

Art Unit: 2185

number for this Art Unit are followings: After-Final (703) 746-7238; Official (703) 746-7239;
Non-Official (703) 746-7240.

Any inquiry of a general nature or relating to the status of this application should be directed to
the Group receptionist whose telephone number is (703)306-5631.

Chun Cao

Mar. 31, 2003



THOMAS LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100